# Exhibit O

**MacInnis 8,284,844 Applied to Representative Renesas, Panasonic, Denso Ten, and Toyota Accused Products**

This claim chart compares independent claim 1 of U.S. Patent No. 8,284,844 ("the MacInnis '844 patent") to Renesas' R-Mobile A1 system on a chip ("SoC").

On information and belief, Renesas' R-Mobile A1 is representative of other Renesas SoCs having similar functionality ("Accused Renesas Infotainment SoCs"), including, without limitation, Renesas' other R-Car SoCs such as the R-Car H2 SoC. Declaration of Dr. Scott Action (Ex. 75, "Acton Decl.") ¶ 19 ("[I]t is reasonable to infer that these SoCs operate in the same or similar manner as the R-Mobile A1."). Upon information and belief, all Renesas SoCs feature the same or substantially similar infringing functionality with respect to the '844 patent. *See* Ex. 61, Renesas R-Car H2 webpage.

The R-Car H2 SoC is incorporated in downstream products, including without limitation, Panasonic head units, such as Ser No. 112905, that form Accused Toyota Navigation units, including Camry Navigation System with WiFi Hotspot (86840-06011).

The R-Mobile A1 SoC is incorporated in downstream products, including without limitation, at least Denso Ten, formerly Fujitsu Ten, head units, such as Ser. Nos. MMA00002, MM910406, and MM100046, which are incorporated in Accused Toyota Navigation units, including Camry Receiver (86804-06180), Corolla Navigation System Kit (86804-02070), and Camry Navigation System Receiver (86804-06100).

On information and belief, the Accused Renesas Infotainment SoCs, and head units and automobiles that incorporate the Accused Renesas Infotainment SoCs, infringe directly, indirectly, and/or under the doctrine of equivalents at least claim 1 of the MacInnis '844 patent.

| **Claim - U.S. Patent No. 8,284,844 (MacInnis)** | **Application of Claim Language to Accused Product** |
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| **Claim 1** | |
| A digital media decoding system comprising: | To the extent that the preamble is deemed limiting, the Accused Renesas SoCs and downstream products include a digital media decoding system.<br><br>At least the Fujitsu Ten (MM910406) head unit, which is included in at least the Toyota Corolla Navigation System Kit (26187), includes a Renesas R-Mobile A1 SoC (highlighted in yellow). |

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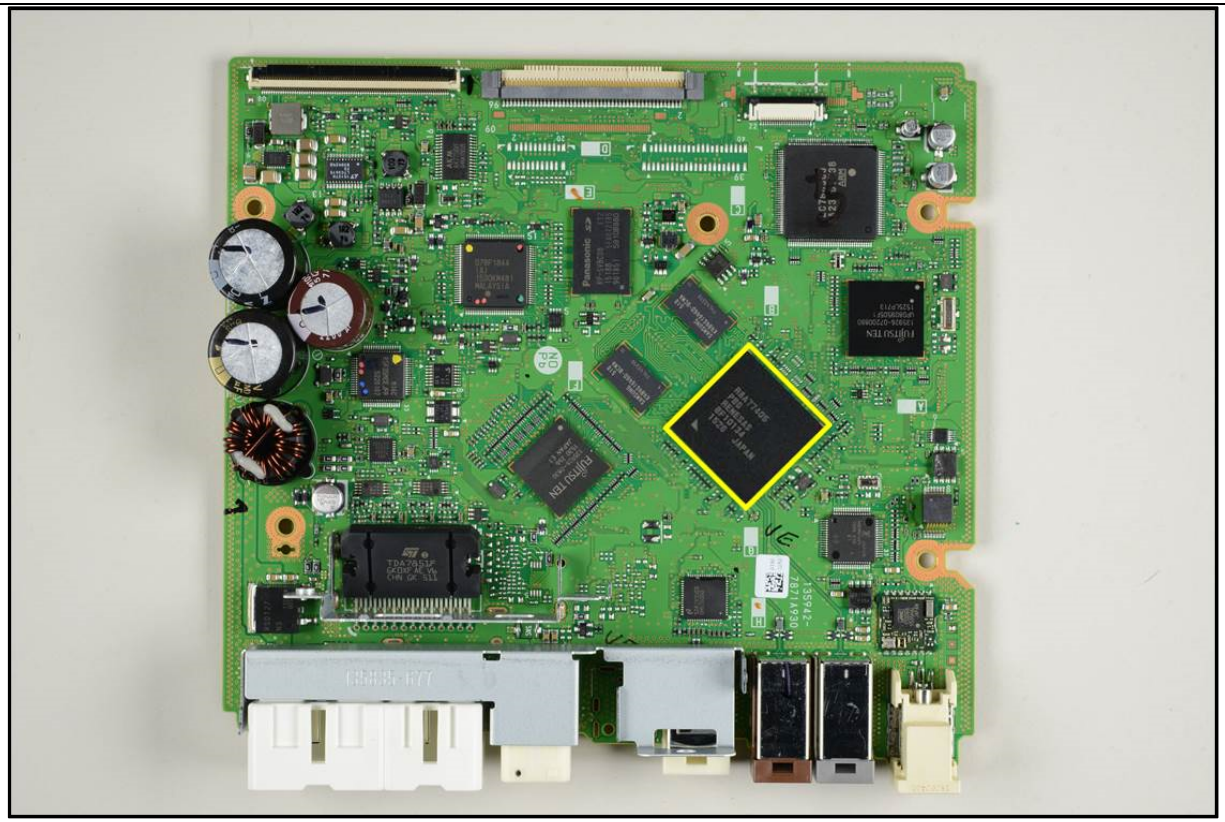
| |  TOYOTA 86804-02070<br>FUJITSU TEN 139000-0690B101<br>ASSEMBLED IN MEXICO<br>MM910406<br>MANUFACTURER: FUJITSU TEN LIMITED<br>ADDRESS: 2-28, Gosho-dori 1-chome Hyogo-ku, Kobe 652-8510, JAPAN<br>MANUFACTURED: September 2015<br>Complies with 21 CFR Chapter 1, Subchapter J.<br>This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.<br>HD Radio Technology manufactured under license from iBiquity Digital Corporation. U.S. and Foreign Patents. HD Radio™ and the HD, HD Radio, and "Arc" logos are proprietary trademarks of iBiquity Digital Corp.<br>AM 530 to 1710kHz FM 87.75 to 107.9MHz<br>FCC ID: BABFT0044C<br>IC: 2024B-FT0044C Model: FT0044C<br>RCPFUFT12-1493 TYPE: FT0044D<br>microSDHC Logo is a trademark of SD-3C, LLC.<br>MM910406 86804-02070 |



At least the Panasonic (AT1604) head unit, which is included in at least the Toyota Camry Navigation System (301378), includes a Renesas R-Car H2 SoC (highlighted in red).

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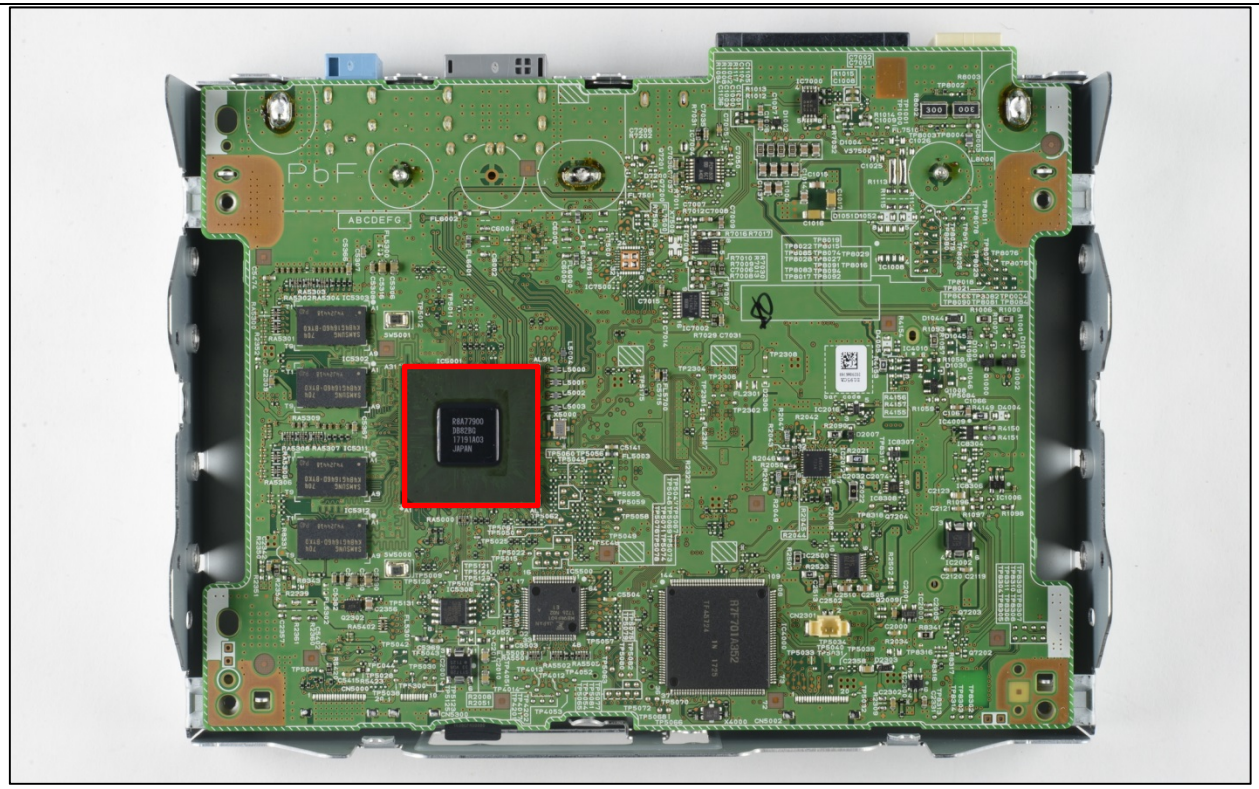
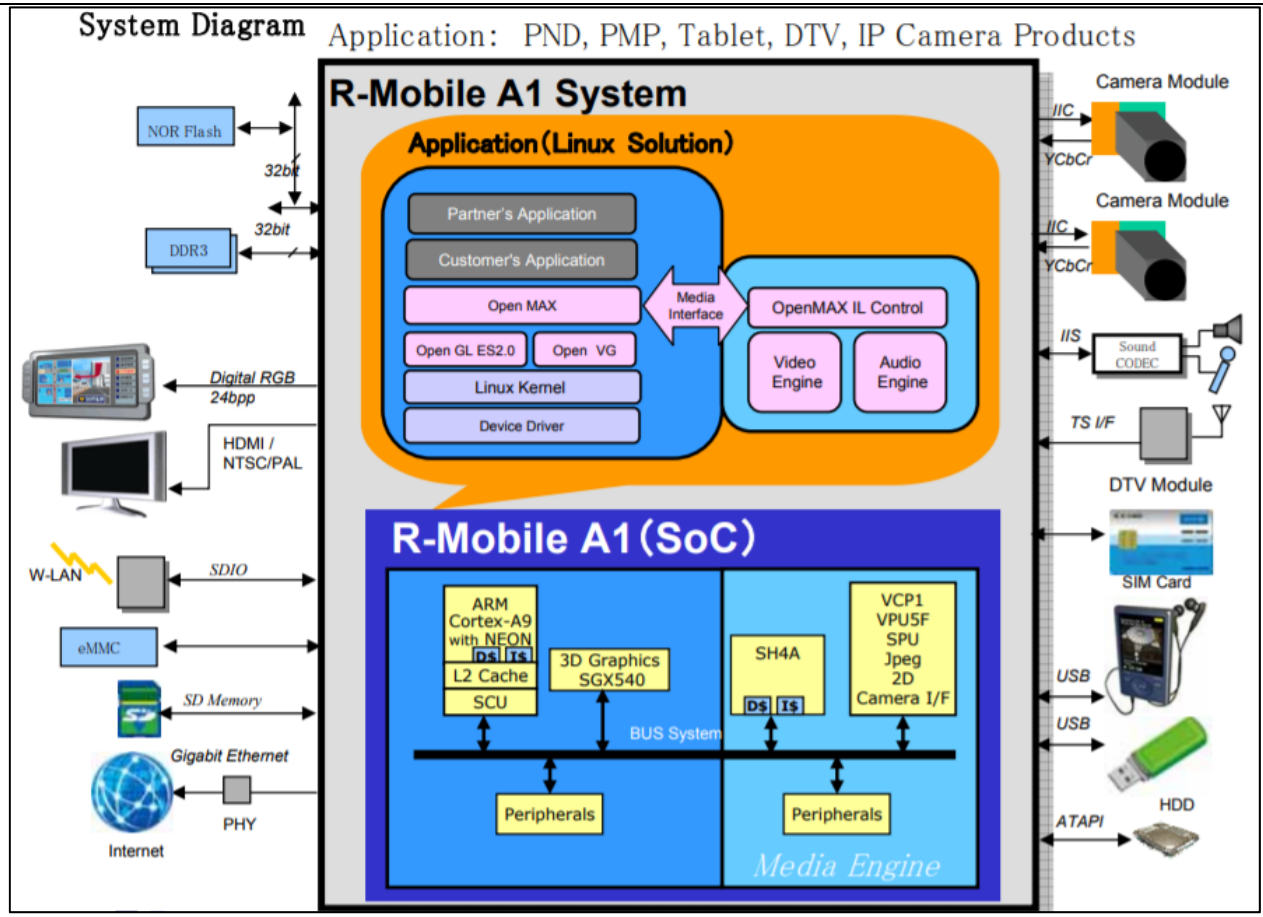
| |  Model No 86840-06011<br>Ref. No CN-SS87N0*XA<br>Set No AT1604<br>DC 12V<br>Negative Ground<br>Panasonic Automotive Systems de Mexico S.A. de C.V.<br>Serial No 112905 |




Renesas R-Mobile A1 SoC includes a digital media decoding system.




Ex. 74 – Renesas R-Mobile A1 Datasheet at 1.

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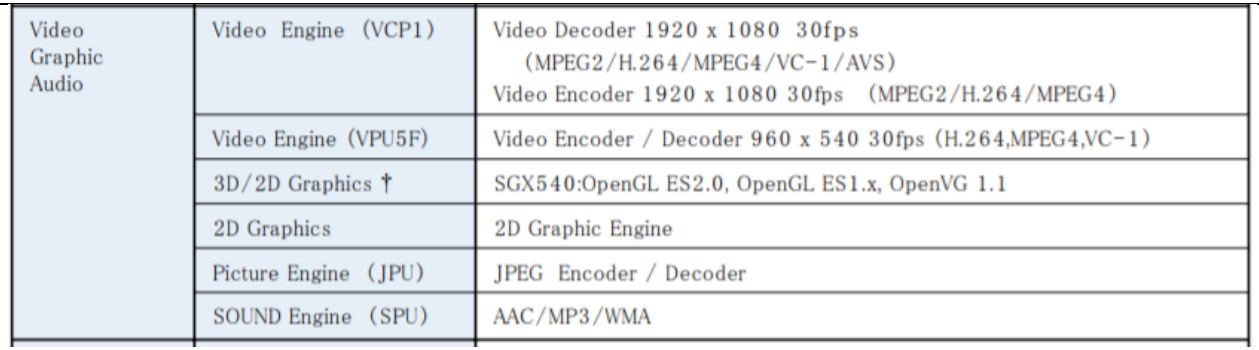
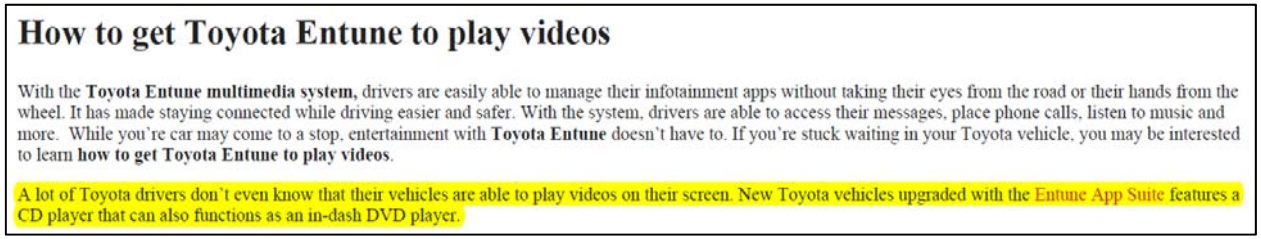
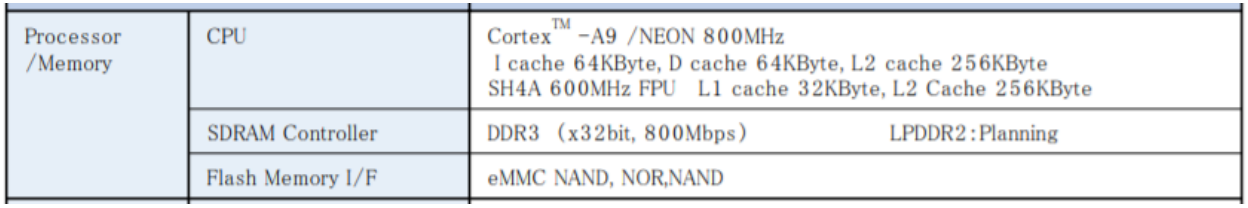
| |  <br>Ex. 74 – Renesas R-Mobile A1 Datasheet at 2.<br><br>  <br>Ex. 95 – Toyota Website - Entune at 1 (highlighted). |
| a processor adapted to control a decoding process; and | The Accused Renesas SoCs and downstream products include a processor adapted to control a decoding process.<br><br>Renesas describes the R-Mobile A1 as having at least one processor and the capability of decoding video according to multiple standards. Ex. 75, Acton Decl. ¶¶ 20-21. For example, as shown below, Renesas describes the R-Mobile A1 SoC as having an ARM Cortex-A9 processor and a SH4A processor.<br><br>  <br>Ex. 74 – Renesas R-Mobile A1 Datasheet at 2. |

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|---|---|---|
| Video<br>Graphic<br>Audio | Video Engine (VCP1) | Video Decoder 1920 x 1080 30fps<br>(MPEG2/H.264/MPEG4/VC-1/AVS)<br>Video Encoder 1920 x 1080 30fps (MPEG2/H.264/MPEG4) |
| | Video Engine (VPU5F) | Video Encoder / Decoder 960 x 540 30fps (H.264,MPEG4,VC-1) |
| | 3D/2D Graphics † | SGX540:OpenGL ES2.0, OpenGL ES1.x, OpenVG 1.1 |
| | 2D Graphics | 2D Graphic Engine |
| | Picture Engine (JPU) | JPEG Encoder / Decoder |
| | SOUND Engine (SPU) | AAC/MP3/WMA |

**How to get Toyota Entune to play videos**

With the **Toyota Entune multimedia system,** drivers are easily able to manage their infotainment apps without taking their eyes from the road or their hands from the wheel. It has made staying connected while driving easier and safer. With the system, drivers are able to access their messages, place phone calls, listen to music and more. While you're car may come to a stop, entertainment with **Toyota Entune** doesn't have to. If you're stuck waiting in your Toyota vehicle, you may be interested to learn **how to get Toyota Entune to play videos**.

A lot of Toyota drivers don't even know that their vehicles are able to play videos on their screen. New Toyota vehicles upgraded with the Entune App Suite features a CD player that can also functions as an in-dash DVD player.

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| Processor<br>/Memory | CPU | Cortex™ -A9 /NEON 800MHz<br>I cache 64KByte, D cache 64KByte, L2 cache 256KByte<br>SH4A 600MHz FPU L1 cache 32KByte, L2 Cache 256KByte |
| | SDRAM Controller | DDR3 (x32bit, 800Mbps) LPDDR2:Planning |
| | Flash Memory I/F | eMMC NAND, NOR,NAND |

<table>
<tr><td></td><td>Renesas also describes the R-Mobile A1 as having the capability to decode multiple video encoding standards, such as MPEG2/H.264/MPEG4/VC-1/AVS.<br><br><table><tr><td rowspan="6">Video<br>Graphic<br>Audio</td><td>Video Engine (VCP1)</td><td>Video Decoder 1920 x 1080 30fps<br>(MPEG2/H.264/MPEG4/VC-1/AVS)<br>Video Encoder 1920 x 1080 30fps (MPEG2/H.264/MPEG4)</td></tr><tr><td>Video Engine (VPU5F)</td><td>Video Encoder / Decoder 960 x 540 30fps (H.264,MPEG4,VC-1)</td></tr><tr><td>3D/2D Graphics †</td><td>SGX540:OpenGL ES2.0, OpenGL ES1.x, OpenVG 1.1</td></tr><tr><td>2D Graphics</td><td>2D Graphic Engine</td></tr><tr><td>Picture Engine (JPU)</td><td>JPEG Encoder / Decoder</td></tr><tr><td>SOUND Engine (SPU)</td><td>AAC/MP3/WMA</td></tr></table><br>Ex. 74 – Renesas R-Mobile A1 Datasheet at 2.<br><br>More particularly, the processor may be either the disclosed processors or a downstream processor also within the SoC, and one or both may be “adapted to control a decoding process.” In SoCs that decode compressed video, it is typical that one or both of these processors controls the process of decoding video. Ex. 75, Acton Decl. ¶¶ 20-21.<br><br>Therefore, on information and belief, the Accused Renesas SoCs and downstream products comprise “a processor adapted to control a decoding process.” Ex. 75, Acton Decl. ¶¶ 20-21.</td></tr>
<tr><td>a hardware accelerator coupled to the processor and adapted to perform a decoding function on a digital media data stream,</td><td>The Accused Renesas SoCs and downstream products include a hardware accelerator coupled to the processor and adapted to perform a decoding function on a digital media data stream.<br><br>The Accused Renesas SoCs decode video that is computationally intensive. For example, Renesas describes its R-Mobile A1 SoC as providing “low-power” consumption while decoding “Full High Definition: 1920 × 1080 pixel, 30fps.” Ex. 74 – Renesas R-Mobile A1 Datasheet at 1, 2. These claimed capabilities suggest that Renesas is “offloading” handling of at least some decoding functions from a CPU alone to a hardware accelerator. Ex. 75, Acton Decl. ¶ 22.<br><br>Therefore, on information and belief, Accused Renesas SoCs and downstream products comprise “a hardware accelerator coupled to the processor and adapted to perform a decoding function on a digital media data stream.” Ex. 75, Acton Decl. ¶ 22.</td></tr>
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| | |
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| wherein the accelerator is configurable to perform the decoding function according to a plurality of decoding methods. | The Accused Renesas SoCs and downstream products include a hardware accelerator that is configurable to perform the decoding function according to a plurality of decoding methods.<br><br>Accused Renesas SoCs are capable of decoding multiple video compression standards. For example, the R-Mobile A1 SoC decodes video compressed using the MPEG2, H.264, MPEG4, VC-1, and AVS standards. Ex. 74 – Renesas R-Mobile A1 Datasheet at 2. Decoding MPEG2-compressed video requires performing several of the same decoding functions as MPEG4 requires. Ex. 75, Acton Decl. ¶ 23. Furthermore, decoding MPEG2-compressed video requires performing those functions according to a different method than MPEG4 requires. Ex. 75, Acton Decl. ¶ 23.<br><br>Therefore, on information and belief, the Accused Renesas SoCs comprise a hardware accelerator that "is configurable to perform the decoding function according to a plurality of decoding methods." Ex. 75, Acton Decl. ¶ 23. |